

IN THE DRAWINGS:

Attached is a replacement sheet of the figure.

REMARKS

Claims 1 - 15 and 17 - 20 are in this application. Claims 1 - 5, 7, 9 and 11 - 13 have been allowed. Claims 6, 8, 10, 14, 15 and 17 - 20 are presented for reconsideration. Each of the rejected independent claims has been amended to address issues in this application.

The drawings have been objected to as not showing each feature claimed.

Applicant attaches herewith a replacement sheet which includes a symbol and reference numeral for a control as well as a pump. It is further noted that one of the pressure sensors 13 is shown in the only figure as arranged within the outer pressure container. Approval of the replacement drawing sheet is requested.

The specification and claims have been objected to. Applicant has now revised the specification and claims to address the issues which have been raised.

Claims 6, 8, 14, 15 and 17 - 20 have been rejected as failing to comply with the enablement requirement. This rejection is based on the position that the claims contain subject matter which was not described in the specification in a way so as to enable the person of ordinary skill in the art to make and use the invention.

With regard to claim 6, it is Applicant's position that the person of ordinary skill in the art does understand how to move the fluid so as to overcome a higher pressure, namely to raise the pressure level of the fluid to be moved. The most straightforward way is to use a pump which can move gas or liquid, namely raise the pressure of the gas or the liquid so as to move it with respect to another fluid. This is simple conceptually and also simple in practice. Really all pumps must move fluid based on the existing or atmospheric pressure and this is quite similar

with regard to a submerged vessel wherein the pressures are higher than atmospheric pressure. In any event, Applicant requests that the Examiner reconsider this rejection particularly with regard to claim 6 which simply raise the pressure of the fluid so as to overcome the environmental pressure, namely to move the fluid.

Particularly with regard to claim 8 it is noted that the claim simply requires the use of higher pressure fluid to increase the pressure of the fluid for moving it relative to the environmental pressure. It is Applicant's position that the person of ordinary skill in the art is necessarily enabled to provide this, namely to use a high pressure source for moving fluid relative to the environmental pressure. Accordingly, reconsideration of the rejection with regard to claim 8 is requested.

Reconsideration as to claim 19 is also requested. Specifically, the arrangement of such a pump is well within the knowledge of the skilled artisan, based on the teaching of the combination as presented in the application. The person of ordinary skill in the art necessarily understands how to use a piston cylinder pump, namely in combination with a valve. The basic concepts of this technology are quite well established such that it is Applicant's position that reconsideration of the rejection as to claim 19 is proper. It is requested that the rejection be withdrawn in view of the established knowledge of the use of pumps, namely to move fluid.

With regard to claim 14, Applicant notes that the specification mentions the control of the shut-off valve, namely that the shut-off valve is controllable. It is Applicant's position that the level of skill in the art is such that basic control such as simple on/off control or controls that are responsive to sensors are well appreciated by the person of ordinary skill in the art such that

the person of ordinary skill in the art is necessarily enabled to practice the invention as claimed in claim 14. Accordingly, it is requested that the rejection of claim 14 be reconsidered and that the rejection be removed.

Claim 15 has been rejected with regard to the discussion of a pressure sensor arranged within the outer pressure container. The pressure sensor arranged within the outer pressure container is mentioned for example in paragraph [0022] wherein it is noted that a pressure sensor or an oxygen sensor 13 can be provided wherein it is Applicant's position that is well appreciated by the person of ordinary skill in the art how to control a valve based on a pressure threshold being exceeded based on a pressure sensor signal. It is Applicant's position that the specification teaches both using an oxygen sensor (concentration) as well as a pressure sensor. Accordingly, reconsideration of the rejection of claim 15 is requested.

With regard to claim 18, Applicant has now corrected the claim such that it is commensurate with the specification.

Reconsideration is requested as noted above with regard to the rejection of the application as being non-enabling.

Claims 6, 8 and 10 have been rejected as being anticipated by Carter Jr.

Each of claims 6, 8 and 10 have been amended to highlight the human use submarine aspects, namely features which in combination with the features already recited in the claims provide advantageous structure, particularly for human submarine use. The combination including typical submarine features and the features already presented in these claims are quite important as noted previously. The novel aspects address particular problems in the submarine

field, namely the human use submarine field. Fuel cells are quite desirable as a power source given the end product being water whereby an overall environmentally safe and efficient system can be used for underwater purposes. However with the use of fuel cells some significant problems have been encountered. These problems are addressed by the invention. The invention departs from the prior art by using a liquid oxygen container located within a pressure hull. However, as this is the same space provided for use by the human crew and for housing and protecting other features which must be protected from the environment, the presence of the LOX container is problematic. Liquid oxygen is known to be volatile and requires maintenance for maintaining its liquid state, avoiding pressure increases upon change of temperature and other related issues. The invention provides the liquid oxygen tank within an outer pressure container, which is also within the pressure hull of the submarine which in turn is in an outer vessel hull. The additional container provides some protection but is used in combination with the system features that allow fluid to be handled, particularly released to avoid excess pressure problems.


The Carter Jr. reference is involved in underwater power production and is not concerned with problems involved with liquid oxygen and presence of humans in a confined space. With the Carter Jr. arrangement a liquid container is surrounded by an outer container 12. The combination presented does not suggest the combination claimed. There is no further submarine vessel hull, a typical feature found in submarines for humans. As such, Carter Jr. fails to teach and fails to suggest the combination of features claimed. Further, Carter Jr. fails to suggest the features. The failure to suggest the features is certainly to some extent based on

the fact that Carter Jr. is teaching a submerged power plant wherein protecting humans and the interaction of liquid oxygen with humans is not a concern. Accordingly, Applicant also requests that the Examiner reconsider the rejection of claims 6, 8 and 10. Further, as Carter Jr. does not suggest the combination claimed, it is requested that the rejection of claim 18 as obvious based on the teachings of Carter Jr.

Reconsideration of the rejections in view of the claims as now presented is requested.

Respectfully submitted
for Applicant,

By:


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Attached: (1) Replacement Sheet of Drawing

SHOULD ANY OTHER FEE BE REQUIRED, THE PATENT AND TRADEMARK OFFICE IS HEREBY REQUESTED TO CHARGE SUCH FEE TO OUR DEPOSIT ACCOUNT 13-0410.

CERTIFICATE OF FACSIMILE TRANSMISSION

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